

## **METHOD AND APPARATUS FOR WATER FLOW SENSING AND CONTROL**

### Abstract of the Disclosure

This invention relates to water or liquid flow detection or sensing systems  
5 that are further capable of actively controlling the flow of the water or other liquid  
that is being sensed.

The invention uses a microphone or other acoustic sensor to detect the  
acoustic signature of liquid flow through a pipe. Water or liquid flowing through a  
pipe or a system of pipes generates an acoustic signature that can be detected,  
10 measured, and analyzed. Based on the analysis of the acoustic signature of the  
liquid flow, a determination is made whether a fault or leak in the line has  
occurred. If a determination is made that a fault has occurred, a water shutoff  
valve is activated ceasing the flow of water or other liquid. The system further  
includes audible and visual warning devices to indicate whether a fault has  
15 occurred as well as general system status. The system is configured to control  
the water main leading into a building or it is configured to control the water  
leading into a specific hose or appliance such as a toilet or washing machine.  
The whole building system uses a computer to analyze the acoustic signatures  
detectable in the house and can determine if one of these signatures has been  
20 occurring for a time period outside an acceptable limit and determining that a  
fault has occurred.

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